

January 2009

The Benefits of Investing in Higher Education: Return on Investment

Executive Summary

In past recessions, Washington's higher education system often has sustained deep funding cuts to help the state meet its fiscal obligations. As the third largest component of the state operating budget, after K-12 education and human services, it is also the largest non-mandatory service of state government. While funding for higher education often bounces back after a recession, deep cuts can have effects that last long after funding is restored.

- It can take years to rebuild faculty, academic programs and student services. Needed building maintenance and construction also are deferred, creating inefficiencies and limiting opportunities.
- Funding reductions also can delay achieving critical state goals in higher education – like expanding college access to traditionally underserved groups.

Maintaining higher education funding levels in the current recession – or even increasing funding in certain strategic areas – offers distinct advantages to the state. This white paper examines the return on investment higher education produces.

The research shows that:

Higher education spending produces immediate economic benefits.

- College-related jobs and payrolls, capital expenditures, purchase of goods and services, and spending by community and technical college students contributed an estimated \$86.1 million in labor and non-labor income to the state economy in 2004.

A more educated population earns higher wages and produces additional tax revenues.

- In Washington, individuals with a bachelor's degree earn, on average, 65 percent more annually than individuals with a high school degree or less.
- In a national study, the typical college graduate working full-time, year-round paid 134 percent more in federal income taxes and almost 80 percent more in total federal, state, and local taxes than the typical high school graduate.

Washington’s research institutions serve as incubators for growth and innovation.

- Although Washington is only 15th in population compared to other states, it ranks ninth in the amount of industrial and federally funded research and development dollars it receives.
- The state’s research institutions have spawned a vibrant life sciences research industry in the state, as well as many successful biotechnology and medical device firms.
- The state’s colleges and universities – two- and four-year – provide a continuing supply of well-educated and trained workers for high-demand jobs – jobs that produce higher wages.

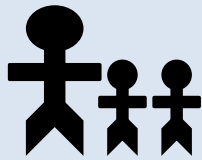
Higher education produces societal benefits that reduce the demand for state services.

- Washington workers who fill education-intensive jobs are more likely to have benefits such as sick leave and retirement programs, and to be covered by a company health insurance program.
- Increasing educational levels are associated with decreased poverty levels and reduced reliance on federal or state social service programs.
- People with at least some level of postsecondary education are less likely to require state-funded medical coverage.
- Increasing educational levels results in a reduction in crime and state correctional costs.
- People with higher levels of education are more likely to be engaged in community activities such as voting and community volunteering.

Millions of Washington residents have benefited, either directly or indirectly, from investments in our higher education system. Consistent funding is one way to ensure that the state’s colleges and universities will continue to play a pivotal role in leading the state and its citizens to long-term economic success and stability.

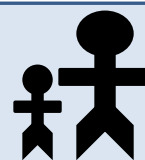
The Overall Effect of Educational Attainment on Washington Families

Data from the 2008 State Population Survey demonstrates that education level affects Washington families in significant ways. Single parent families, as well as dual parent families, benefit from the educational attainment level of parents.



Single parent families without a college degree

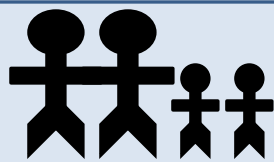
- Median annual household income: \$24,000
- Median number of kids: 2
- Percent reporting use of food stamps: 38.6%
- Percent using state or federal welfare: 18.3%
- Percent living below 200% of federal poverty guidelines: 66.3%



Single parent families with a college degree

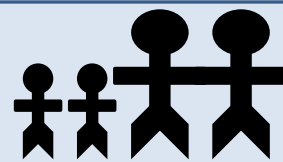
- Median annual household income: \$45,000
- Median number of kids: 1
- Percent reporting use of food stamps: 24.5%
- Percent using state or federal welfare: 9.1%
- Percent living below 200% of federal poverty guidelines: 32.8%

Two parent families with higher levels of education earn more, typically do not rely on federal or state welfare, rarely live below federal poverty guidelines and rarely use food stamps. Families in which both parents have only earned a high school degree report using food stamps nearly three times as often, and federal or state welfare four times as often, three times as many families are living below federal poverty guidelines.



Two parent families where both parents have a high school degree

- Median annual household income: \$61,500
- Median number of kids: 2
- Percent reporting use of food stamps: 13.7%
- Percent using state or federal welfare: 4.4%
- Percent living below 200% of federal poverty guidelines: 21.2%



Two parent families where both parents have a bachelors degree

- Median annual household income: \$101,645
- Median number of kids: 2
- Percent reporting use of food stamps: 5%
- Percent using state or federal welfare: 0%
- Percent living below 200% of federal poverty guidelines: 6.3%



January 2009

The Benefits of Investing in Higher Education: A Return on Investment

Higher education provides benefits to individuals, society, and the economy. This discussion draft identifies and describes higher education's return on investment and how higher education funding is part of the solution to building a strong economy, reducing social costs, and generating payrolls and tax revenues.

Introduction

Today, public agencies in Washington face enormous budget challenges caused by the significant decline in tax revenues that has accompanied the nation's financial crisis. State agencies, including public institutions of higher education, have been asked to cut spending and re-assess budgets and goals in light of these new economic circumstances.

If history is an indicator, the state's system of higher education – its students, faculty, administrators, and employees – will be significantly impacted by this crisis. Because higher education is not a constitutionally required service to citizens, it often faces cuts during economic downturns. This occurs at a time when demand for higher education is on the increase as young adults and mid-career workers seek to pursue college goals in lieu of work, and to update skills or retrain for new careers.

When the economy rebounds, investments in higher education often rebound as well. However, cuts deep enough to reach the bone of the higher education system can have effects long after tax revenues begin to recover from a recession. It takes years to rebuild programs and hire new faculty. In addition, cuts into the base can affect our ability to achieve longer term strategic goals, such as increasing degree production, improving academic quality, and expanding access to higher education for lower income families and underserved racial and ethnic populations.

Higher education in Washington is a multi-faceted delivery system, involving premier research institutions, highly regarded regional universities, and a strong, nationally-recognized community and technical college system. To sustain the efforts and achievements of the past, as well as make progress towards the goals in the *2008 Strategic Master Plan for Higher Education in Washington*, consistent funding of higher education is necessary. By preserving the progress we have made, we will help ensure that higher education makes a lasting contribution to our state's economic health and wellbeing.

Return on Investment

Investment in higher education has served as an engine for economic growth and recovery at other times in our nation's history. For example, record high unemployment rates plagued the U.S. during the 1930s, and U.S. leaders were concerned about a return to recession after World War II. Following the war in 1946, Congress passed the G.I. Bill, which enabled returning veterans to pursue the goal of a college education. This massive investment in higher education at a time of feared recession resulted in "reduced projected unemployment rolls and, at the same time, restructured the U.S. labor market by producing a more skilled labor force."¹

During previous economic downturns in Washington state, policymakers have sometimes chosen to slash higher education funding as a convenient short-term solution to the state's budget problems. However, such solutions arguably fail to give adequate weight to the long-term recuperative effects of sustained funding. Rather than view the higher education budget as a "rainy day fund" to be used in solving an immediate crisis, it can also be seen as a tool for achieving long-term economic success and stability. The Washington Learns Report submitted to Gov. Chris Gregoire in 2006, discussed education in terms of a return on investment that pays big dividends for individuals, communities, and the state as a whole. "We make these investments because we expect a high rate of return in the form of higher wages and social benefits for the graduates and thriving civic communities for all of us."²

The belief that higher education can play a pivotal role in the state's economic recovery is reflected in a set of principles the Higher Education Coordinating Board (HECB) adopted in November 2008, to assist policymakers in arriving at decisions on the state's 2009-11 biennial budget. The principles, which were adopted in consultation with public baccalaureate institutions and the State Board for Community and Technical Colleges (SBCTC), urged policymakers to:

- Fully fund the "carry-forward" spending level that will constitute the base of the next biennium's budget.
- Provide full funding for any new enrollments or enhancements.
- Limit tuition increases to those allowed within current law and policy.
- Provide full funding of the State Need Grant at a level sufficient to offset any tuition increases to ensure that higher education remains accessible to lower income people.

Accompanying language adopted by the HECB clearly recognizes that adequately funding Washington's higher education system is integral to improving the state's current and long-term economic condition. But higher education provides additional benefits to individuals and society as well. The purpose of this white paper is to identify and describe these benefits in order to more fully inform policymakers about the implications of significant cuts in state spending for higher education.

Higher Education: Part of the Solution

The public higher education system is funded both by individual students through tuition payments, and by taxpayers through state-budget allocations. Likewise, the benefits of postsecondary education accrue both to the individuals who obtain college educations, and to the community as a whole.³ For individuals, a higher level of educational attainment leads to a greater likelihood of gainful employment, higher earnings and wages, increased job benefits such as vacation and sick leave, improved health, and a lifestyle that is more engaged and involved in the community.

A state with a more highly educated population generates more tax revenues per capita, experiences decreased demand for social services such as food stamps and public assistance, and increases potential for economic growth and vitality.

In broad terms, the benefits of higher education can be categorized as follows: creating a stronger economy, increasing personal earnings and benefits, reducing social costs, and creating a more engaged citizenry.

Strengthening the Economy

Studies commissioned by four-year institutions and by community and technical colleges demonstrate that public investments in higher education produce direct and immediate economic benefits for the state as a whole, and for the communities that host educational institutions:

- In FY 2006, Central Washington University generated more than \$268.5 million in spending in the Washington economy. This included university spending on payroll, capital expenditures, and goods and services, as well as spending by students and visitors.⁴
- The effect of payroll spending by Eastern Washington University employees produced an additional \$77 million in economic activity in Spokane County in 2004. This spending created the equivalent of 1,073 additional jobs, including 232 jobs in health care and social assistance, and 191 jobs in retail trade.⁵
- Western students spend more than \$58 million annually in room and board off campus, and another \$11 million on books and supplies.
- Adjusting for taxes and other monies withdrawn from the economy in support of community and technical colleges, college operations in 2004 contributed an estimated \$86.1 million in labor and non-labor income to the state economy.
- University of Washington received \$1.02 billion in grants and contracts in 2006-07, supporting over 6,800 FTE employees at the University.⁶
- Washington State University received \$213 million in research expenditures in 2007, plus \$111 million in sponsored public service expenditures, landing WSU among the most active and productive land-grant research universities in America.⁷

Economic activity resulting from the delivery of higher education services also produces increased tax revenues to state and local governments that at least partially offset the cost of providing educational programs. Eastern Washington University calculated that more than 17 percent of the \$57.5 million in state appropriations received by Eastern in 2004 was “recaptured” by some public entity as the result of taxes paid on economic activities created by the initial appropriations.⁸

While spending on higher education generates immediate economic benefits, a more significant and lasting contribution results from growth in the number of educated workers who are capable of competing for high-demand jobs in the today’s global economy. Investing in higher education also serves as an incubator for long term growth of high demand industries in our state.

A 2008 report prepared for the Higher Education Coordinating Board noted that six decades of federal investment in the University of Washington Medical School attracted additional private investment that has spawned a vibrant life sciences research industry in the state, as well as many successful biotechnology and medical device firms.⁹ Though only 15th in population compared to other states, Washington ranks 9th in the amount of industrial and federally-funded research and development dollars it receives.¹⁰

Another report ranked Washington 5th among the 50 states in private-industry investment in research and development as a percentage of worker earnings.¹¹ The aerospace industry’s propensity for research and development was cited as a reason for Washington’s ranking. The report concluded that states with significant corporate research and development laboratory facilities or a large number of high-tech firms generally score well.¹²

A report by the Technology Alliance provides considerable evidence that business investments in high-tech fields such as computer science, engineering, and medicine have a profound impact on the state’s economic health. In 2007, for example, the state’s technology-based industries employed more than 340,000 people. With the multiplier effects that such jobs create, the tech industry accounted for 1.16 million jobs, or 40 percent of the covered employment in Washington.¹³

Jobs that pay higher wages – and require a higher level of educational attainment – also create strong secondary impacts in the economy as a result of increased expenditures for food, housing, and other goods and services. For example, this “multiplier effect” for technology-based industries has been estimated to be 3.39, higher than the average multiplier of 2.75 for all Washington industries.¹⁴

Many tech-oriented jobs require college degrees or professional certificates that must be obtained after high school and many of the fastest growing jobs in the United States require at least one year of postsecondary education.¹⁵

Employment projections suggest that high-tech fields will continue to play a significant role in Washington’s economy for years to come. The Washington Employment Security Department forecasts that 45 percent of total job openings between now and 2016 will require a postsecondary degree, certificate, or formal apprenticeship. In keeping with similar projections at the national level, Employment Security projects that 23 percent of all job openings will require a mid-level credential and 22 percent will require a baccalaureate degree or above.¹⁶

Nationally, this is also true where written communication is considered a critical skill by most employers; 38 percent of employers surveyed found high school graduates “deficient” in reading comprehension. Remedial writing courses cost corporate employers \$3.1 billion each year and \$221 million for state employers.¹⁷

The result of producing insufficient numbers of educated workers hurts Washington businesses. The 2007 Workforce Training Board Employer Survey showed employers who had difficulty hiring indicated that the impacts on their businesses included lowered productivity, reduced product quality, and impeded development.

Washington’s strategic master plan for higher education recognizes the central role that higher education plays in developing the state’s economic potential. It outlines a plan for filling unmet educational needs in high-demand fields.

A master plan implementation strategy adopted by the HECB proposes to focus early efforts on expanding the pipeline of students entering high demand fields.

Increasing Family Earnings and Benefits

While spending on higher education generates immediate and long-term economic benefits for the community at large, individuals also have strong financial incentives to earn college degrees and certificates. The benefits that individuals gain with increasing levels of education include more generous workplace benefits and higher annual earnings throughout their working lives.¹⁸

One study has shown that nationally, the typical baccalaureate degree holder earns 61 percent more than the typical high school graduate and he or she has paid off student debt that covered full tuition by the age of 33, and surpassed the income they lost from four to six years of absence in the workforce.¹⁹ Additionally, college educated workers are more likely to be offered pension plans by their employers are far more likely to participate than high school graduates.²⁰

Washington’s more educated workers follow the national pattern of higher income potential. The state Employment Security Department found that wages associated with unfilled positions grew with the level of education required to fill those positions. In an analysis of job vacancies in the spring of 2008, positions requiring a high school diploma paid \$11 per hour, while those requiring a bachelor’s degree paid \$25.48 per hour.²¹

Chart 1 shows that Washington citizens aged 25-64 with high school degrees or less, had median incomes of \$32,000 in 2007. Those from the same age group who had earned bachelor’s degrees had median annual earnings of \$53,000.

Chart 1
Median Annual Earnings Increase with Higher Levels of Educational Attainment
Washington citizens age 25-64, 2007 Earnings

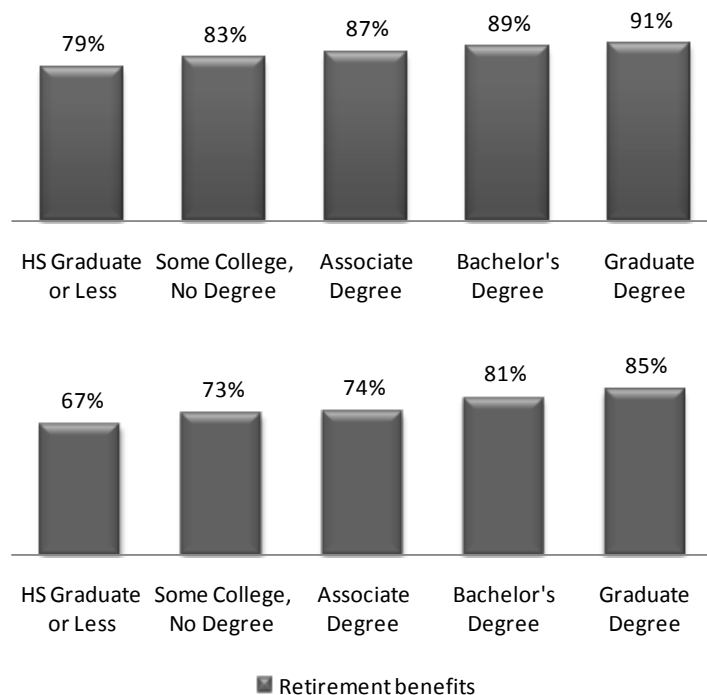


Source: 2008 Washington State Population Survey. HECB analysis of data downloaded on 11/21/08 from <http://www.ofm.wa.gov/sps/default.asp>

Evidence suggests that increasing the proportion of educated workers results in higher wages for other sectors of the population as well. One study has found that a 1 percentage point increase in the proportion of the population holding four-year college degrees leads to a 1.9 percent increase in the wages of workers without a high school diploma and a 1.6 percent increase in the wages of high school graduates.²²

Besides higher annual wages, educational attainment provides other financial rewards for workers and their families. Chart 2 shows that Washington residents who attain higher levels of education are more likely to work for employers who provide employee benefits such as paid vacation or sick leave and retirement benefits.

Chart 2
Percent of Employees Offered Job Benefits Increases with Increasing Educational Attainment, Washington citizens age 25-64, Spring 2008



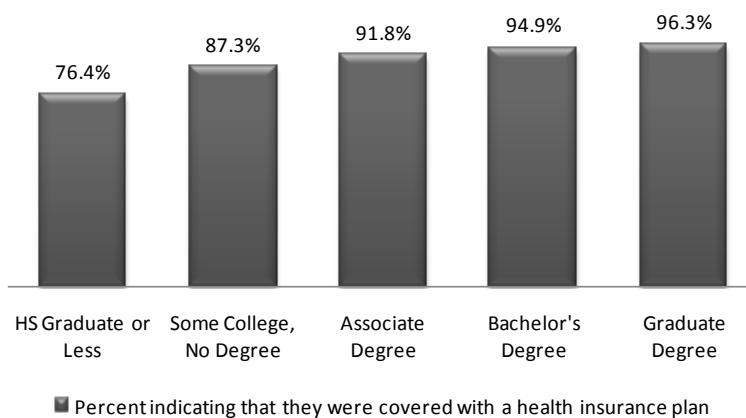
Source: 2008 Washington State Population Survey. HECB analysis of data downloaded on 11/21/08 from www.ofm.wa.gov/sps/default.asp

Finally, the higher wages and increased economic activity generated by a more educated population benefit the state as a whole by producing additional tax revenue. A national study has found that the typical college graduate working full-time year-round paid 134 percent more in federal income taxes and almost 80 percent more in total federal, state and local taxes than the typical high school graduate.²³ In Washington, tech-based industries generated an estimated \$5.7 billion in business, sales, and use taxes for state and local government in 2003.²⁴

Another corollary benefit of higher education to individuals and to our state is that individuals with higher levels of postsecondary education are more likely to hold health insurance coverage from a source other than the state basic health care plan.

Chart 3
Percent Indicating that they were Covered by Health Insurance
Increases by Higher Educational Attainment
Washington citizens age 25-64, Spring 2008

Percent indicating that their health insurance was provided by their employer, union, the military, or self-purchased



Source: 2008 Washington State Population Survey. HECB analysis of data downloaded on 11/21/08 from <http://www.ofm.wa.gov/sps/default.asp>

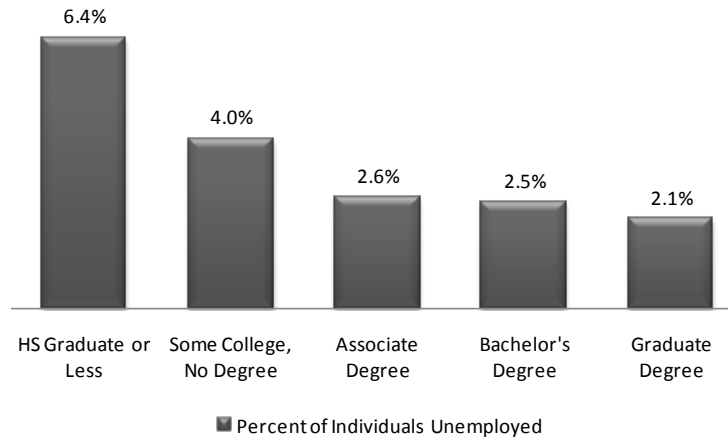
Reducing Social Costs

While raising the state's level of educational attainment benefits individuals and society through increased wages and expanded economic activity, it has another positive effect—reducing costs associated with social problems such as unemployment, crime, and poor health. Reducing the consequences of these social factors is another reason for maintaining a consistent level of investment in higher education, even when the state's economy is facing severe challenges.

Lower unemployment

Individuals who possess postsecondary degrees or certificates are in high demand in today's knowledge-driven economy. It follows that they are less likely to be unemployed at any given time than those with high school degrees or less. Chart 4 shows that the percentage of Washington residents who were unemployed in spring of 2008 declined as educational level increased. The data suggests that more highly educated individuals are less likely to require benefits such as unemployment insurance during their working lives.

Chart 4
Percent Unemployed Decreases as Educational Attainment Increases
Washington citizens age 25-64, Spring 2008

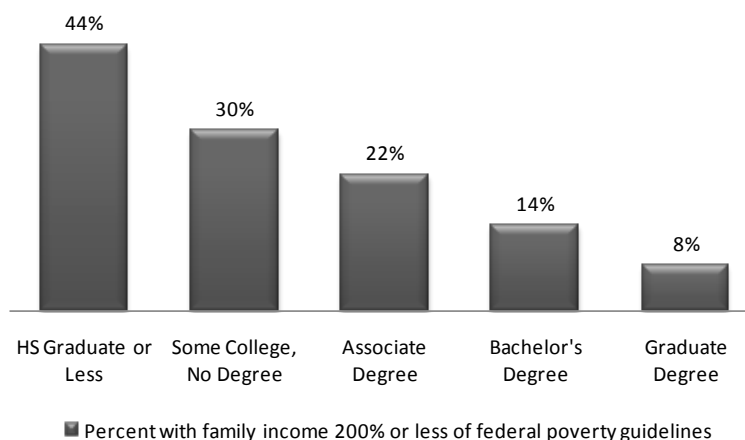


Source: 2008 Washington State Population Survey. HECB analysis of data downloaded on 11/21/08 from <http://www.ofm.wa.gov/sps/default.asp>

Reduced reliance on social services

The financial rewards that accompany higher levels of educational attainment mean that many college graduates live lives that are well above the poverty level. The poverty rate for households supporting bachelor's degree recipients is one-third the poverty rate of households supporting high school graduates only.²⁵

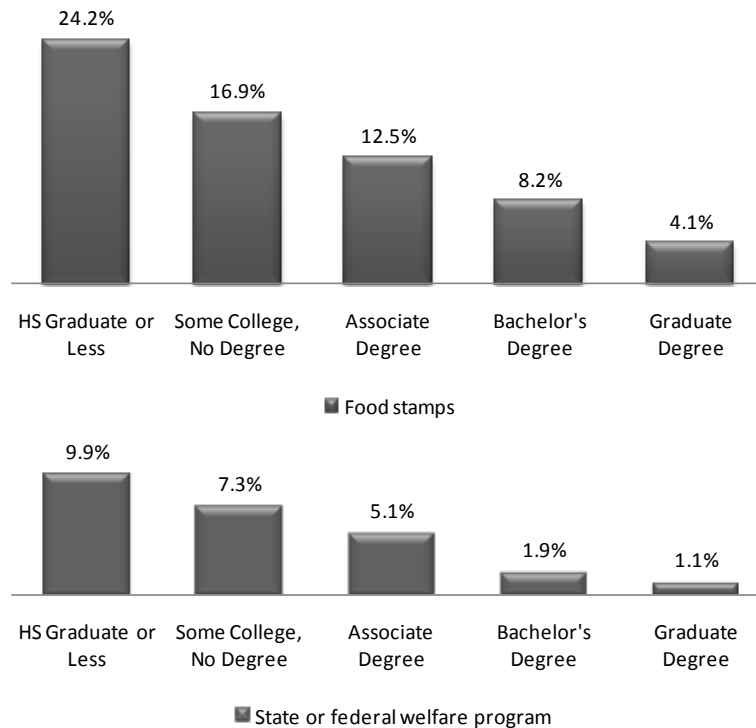
Chart 5
Percent of Families living at 200 Percent or Less of the Federal Poverty Guidelines
Decreases with Higher Educational Attainment
Washington citizens age 25-64, 2007 Family Income



Source: 2008 Washington State Population Survey. HECB analysis of data downloaded on 11/21/08 from <http://www.ofm.wa.gov/sps/default.asp>

Washingtonians with higher levels of degree attainment are far less likely to require social services such as food stamps or state and federal welfare programs. This trend carries nationally as bachelor's degree holders reported that someone in their household was using social services 13 percent less than high school graduates.²⁶

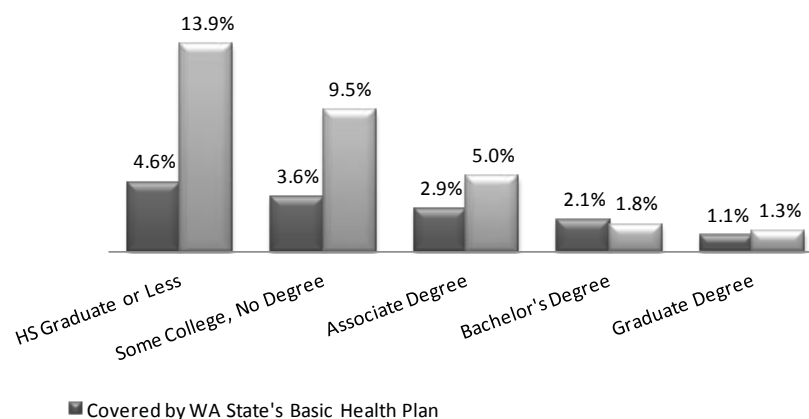
Chart 6
Percent of Individuals Participating in Federal or State Social Services
Decreases with Increasing Educational Attainment
Washington citizens age 25-64, 2007 Participation
 Percent indicating household used social services



Source: 2008 Washington State Population Survey. HECB analysis of data downloaded on 11/21/08 from <http://www.ofm.wa.gov/sps/default.asp>

Furthermore, persons with higher educational attainment are less likely to require publicly funded health plans such as Medicaid or other DSHS Medical Assistance Administration or Washington State's Basic Health Plan than those with higher levels of postsecondary education.

Chart 7
Participation in Washington State Basic Health Plan, Medicaid or other
DSHS Medical Program Decreases with Increased Educational Attainment
Washington citizens age 25-64, Spring 2008
 Percent indicating participation in state provided medical plan



Source: 2008 Washington State Population Survey. HECB analysis of data downloaded on 11/21/08 from <http://www.ofm.wa.gov/sps/default.asp>

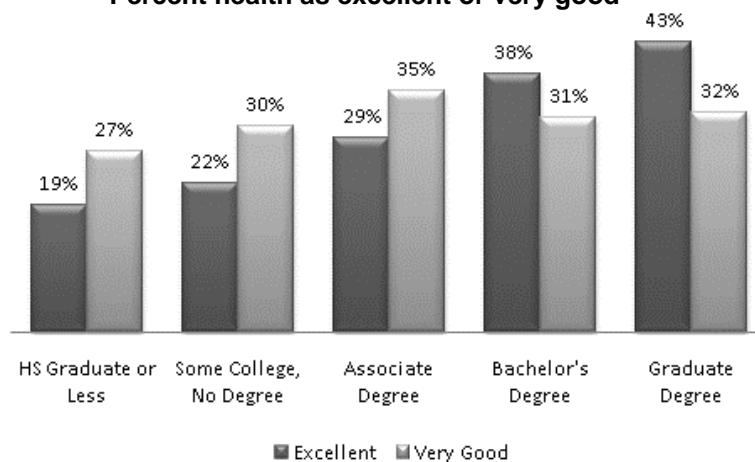
Improved health

Providing adequate health care for citizens continues to be a major challenge for state and federal governments. Efforts to reduce health-care costs and improve the overall health of the population have included anti-smoking campaigns and programs to encourage exercise and physical fitness.

Educational level appears to have a relationship to healthy behaviors and perceptions of overall health. Studies suggest that college graduates were more likely to heed widespread public warnings about the serious health effects of smoking than those with less education. By 1970, the smoking rate among college graduates had declined to 37 percent, compared to 44 percent for high school graduates.²⁷ Researchers have reported that 61 percent of four-year college graduates ages 25 to 34 exercised vigorously at least once a week, compared to 31 percent of high school graduates.²⁸

Nationally, at every age and income level, individuals with higher degree attainment report better health than those with less postsecondary education.²⁹ Chart 8 shows that the perception of Washington citizens that their health as excellent or very good increases with higher levels of educational attainment.

Chart 8
Self Reported State of Health Improves with Increased Educational Attainment
Washington citizens age 25-64, Spring 2008
Percent health as excellent or very good

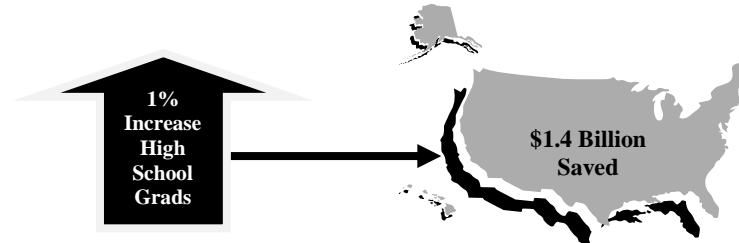


Source: 2008 Washington State Population Survey. HECB analysis of data downloaded on 11/21/08 from <http://www.ofm.wa.gov/sps/default.asp>

Lower correctional costs

Another benefit of increased educational levels in a society is its impact on reducing crime. Many studies suggest that increasing educational attainment results in a reduced need for taxpayer investments in corrections. In fact, several studies suggest that a 1 percent increase in the high school completion rate of men (ages 20-60) would save the United States as much as \$1.4 billion per year in reduced costs from crime incurred by victims and society at large. In individual terms, these savings amount to \$1,170-\$2,100 per additional high school graduate.³⁰

Chart 9
Increasing Educational Attainment Decreases Costs that Result from Crime
National Study, 2003



Creating a more engaged citizenry

A final category of benefits resulting from increased levels of educational attainment is perhaps the least tangible, but no less significant for society. Evidence suggests that personal engagement in social and political activities increases with level of education.

A national survey reported that, in the 2004 election, the percentage of U.S. citizens age 25 and older who voted increased with higher levels of postsecondary education.³¹ Overall, in the 2004 election, voting rates differed most among younger people by education level. Only 25 percent of individuals without a high school degree reported voting, 38 percent of individuals with a high school degree voted, and 67 percent of individuals with a bachelor's degree voted between the ages of 18 and 24.

In a national survey, the percentage of individuals ages 25 and older who volunteered and the mean number of hours volunteered increased with higher levels of postsecondary education:³²

<u>Education Level</u>	<u>Percent Reporting Volunteerism</u>
Not a high school graduate	9%
High school graduate	19%
Some college or associate degree	31%
Bachelor's degree	43%

Research has shown that this increased desire to give back to the community manifests itself in some less-than-obvious ways. For example, in 2005, about 9 percent of college graduates reported having given blood in the past year, compared to about 4 percent of high school graduates.³³

Conclusion

Decades of public investment have created a system of higher education that has helped produce dramatic economic diversification and growth in Washington state. Millions of Washington residents have benefited, either directly or indirectly, from investments in our higher education system.

In 2009, Washington is facing a budget crisis spawned by the drop in consumer spending that has accompanied a recession of global proportions. In previous recessions, policymakers chose to significantly cut higher education funding and increase tuition in order to balance the state budget. While policy makers in 2009 will have to make difficult decisions about continued funding for many state-agency programs, an understanding of higher education's benefits to the state and its potential to help grow the economy out of its current downturn are important in order to make the most informed decisions concerning the budget.

Spending on higher education can be viewed in terms of a return on investment. And what are those returns? Certainly, a lifetime of financial rewards accrues to the majority of those who earn college degrees or certificates. But public spending on higher education also benefits the broader economy by creating additional jobs—both as a result of the daily operations of the higher education system, and as a product of new industries spawned through academic research. New or expanded industries in health and medicine, computers, and other fields are products of the state's earlier investments in higher education.

Higher education produces other benefits as well. A more highly educated population relies less on the social safety net. A workforce trained for high-demand jobs reduces unemployment and the costs associated with it. College-educated workers and their families are more likely to have health care and other employee benefits.

Providing sufficient resources to boost the level of educational attainment also produces citizens who are more engaged in society through their voting and volunteerism patterns.

The citizens of Washington expect that their investments in public education will reap strong returns for all the citizens of the state. Consistent funding is one way to ensure that the state's colleges and universities will play a pivotal role in leading the state to a more prosperous future.

Endnotes

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